



68/46 U.S. PTO



07/07/97

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67477 U.S. PTO
08/888202
07/07/97

PTO/SB/14 (11-96)

Approved for use through 6/30/99. OMB 0651-0033
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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REQUEST FORM FOR FILING A PATENT APPLICATION UNDER 37 CFR 1.62

DOCKET NUMBER	ANTICIPATED CLASSIFICATION OF THIS APPLICATION	PRIOR APPLICATION EXAMINER	ART UNIT
	CLASS SUBCLASS		

Address to:

Assistant Commissioner for Patents
Box FWC
Washington, D.C. 20231This is a Request for filing a ☐ continuation-in-part, ☐ continuation, ☐ divisional application under 37 CFR 1.62 of prior application Number ____ / _____, filed on _____ entitled _____ by the following named inventor(s):

FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
	PIMENTEL	JULIO	LIONEL
RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
	Buford	GEORGIA	PERU
POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE & ZIP CODE / COUNTRY
	3206 Windgate Dr.	Buford	GA 30519
FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE & ZIP CODE / COUNTRY
FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
RESIDENCE & CITIZENSHIP	CITY	STATE OR FOREIGN COUNTRY	COUNTRY OF CITIZENSHIP
POST OFFICE ADDRESS	POST OFFICE ADDRESS	CITY	STATE & ZIP CODE / COUNTRY

☐ Additional inventors are being named on separately numbered sheet(s) attached hereto.

The above identified prior application in which no payment of the issue fee, abandonment of, or termination of proceedings has occurred, is hereby expressly abandoned under 37 CFR 1.62(g) as of the filing date of this new application. Please use all the contents of the prior application file wrapper, including the drawings, as the basic papers for the new application. (No new specification is required, 37 CFR 1.62(e).) (Note: 37 CFR 1.60 may be used for continuation or divisional applications where the prior application is not to be abandoned.)

- ☐ Enter the unentered amendment previously filed on _____ under 37 CFR 1.116 in the prior application.
- ☐ A preliminary amendment is enclosed.
- ☐ This application is being filed by less than all the inventors named in the application. The Commissioner is requested under 37 CFR 1.62(a) to delete the names of the following person or persons from the prior application who are not inventors of the invention being claimed in this application:

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
TOTAL CLAIMS (37 CFR 1.16(c))		25 - 20 =	5	x \$ 11 =	\$ 55
INDEPENDENT CLAIMS (37 CFR 1.16(b))		- 3 =		x \$ _____ =	
MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))				+ \$ _____ =	
				BASIC FEE (37 CFR 1.16(a))	+ 385
				Total of above Calculations =	440
				Reduction by 50% for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28).	
				TOTAL =	440

[Page 1 of 2]

Burden Hour Statement: This form is estimated to take 0.5 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box FWC, Washington, DC 20231.

(REQUEST FORM FOR FILING A PATENT APPLICATION UNDER 37 CFR 1.62, Page 2)

4. ☒ A verified statement to establish small entity status under 37 CFR 1.9 and 1.27
☒ is enclosed.
☐ was filed in the prior application and such status is still proper and desired (37 CFR 1.28(a)).
5. ☐ The Commissioner is hereby authorized to charge fees under 37 CFR 1.16 and 1.17 which may be required, or credit any overpayment to Deposit Account No. _____ (A duplicate copy of this form is enclosed.)
6. ☒ A check in the amount of \$ 440 is enclosed.
7. ☐ A new oath or declaration in compliance with 37 CFR 1.63 is included since this application is a continuation-in-part which discloses and claims additional matter.
8. ☐ Amend the specification by inserting before the first line the sentence:
This application is a ☐ continuation-in-part, ☐ continuation, ☐ division, of application number _____ / _____, filed _____, now abandoned.
9. ☐ Priority of foreign application number _____, filed on _____ in (country) _____ is claimed under 35 U.S.C. 119(a) - (d).
10. ☐ The prior application is assigned of record to _____

11. ☐ The power of attorney in the prior application is to: (name & address) _____

12. ☐ Also enclosed

Address all future correspondence to: (May only be completed by applicant, or attorney or agent of record)

☐ Customer Number

OR

Firm or

☒ Individual Name

Type Customer Number here

Place Customer Number Bar
Code Label here

JULIO L. PIMENTEL

Address 3206 WINDGATE DR.

Address

City Buford State GA ZIP 30519

Country

Telephone (770) 945-6678 Fax (770) 945-9762

It is understood that secrecy under 35 U.S.C. 122 is hereby waived to the extent that if information or access is available to any one of the applications in the file wrapper of a 37 CFR 1.62 application, be it either this application or a prior application in the same file wrapper, the Patent and Trademark Office may provide similar information or access to all the other applications in the same file wrapper.

7-2-97

Date

Signature

JULIO L. PIMENTEL

Typed or printed name

☒ Inventor(s)

☐ Assignee of complete interest. Certification under 37 CFR 3.73(b) is enclosed.

☐ Attorney or agent of record

☐ Filed under 37 CFR 1.34(a)

Registration number if acting under 37 CFR 1.34(a) _____

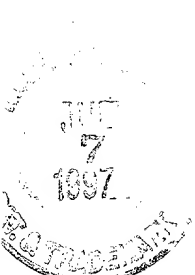


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08/888202

FEE TRANSMITTAL	Complete if Known		
	Application Number		
	Filing Date		
	First Named Inventor	JULIO L. PIMENTEL	
	Group Art Unit		
	Examiner Name		
TOTAL AMOUNT OF PAYMENT (\$)		440.-	
		Attorney Docket Number	

METHOD OF PAYMENT (check one)	FEE CALCULATION (continued)																																																																																																																
<p>1. <input type="checkbox"/> The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:</p> <p>Deposit Account Number <input type="text"/></p> <p>Deposit Account Name <input type="text"/></p> <p><input type="checkbox"/> Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17 <input type="checkbox"/> Charge the Issue Fee Set in 37 CFR 1.18 at the Mailing of the Notice of Allowance, 37 CFR 1.311(b)</p> <p>2. <input checked="" type="checkbox"/> Payment Enclosed:</p> <p><input checked="" type="checkbox"/> Check <input type="checkbox"/> Money Order <input type="checkbox"/> Other</p>	<p>3. ADDITIONAL FEES</p> <table border="1"><thead><tr><th>Large Entity Fee Code (\$)</th><th>Small Entity Fee Code (\$)</th><th>Fee Description</th><th>Fee Paid</th></tr></thead><tbody><tr><td>105 130</td><td>205 65</td><td>Surcharge - late filing fee or oath</td><td></td></tr><tr><td>127 50</td><td>227 25</td><td>Surcharge - late provisional filing fee or cover sheet.</td><td></td></tr><tr><td>139 130</td><td>139 130</td><td>Non-English specification</td><td></td></tr><tr><td>147 2,460</td><td>147 2,460</td><td>For filing a request for reexamination</td><td></td></tr><tr><td>112 900</td><td>112 900</td><td>Requesting publication of SIR prior to Examiner action</td><td></td></tr><tr><td>113 1,790</td><td>113 1,790</td><td>Requesting publication of SIR after Examiner action</td><td></td></tr><tr><td>115 110</td><td>215 55</td><td>Extension for response within first month</td><td></td></tr><tr><td>116 390</td><td>216 195</td><td>Extension for response within second month</td><td></td></tr><tr><td>117 930</td><td>217 465</td><td>Extension for response within third month</td><td></td></tr><tr><td>118 1,470</td><td>218 735</td><td>Extension for response within fourth month</td><td></td></tr><tr><td>119 300</td><td>219 150</td><td>Notice of Appeal</td><td></td></tr><tr><td>120 300</td><td>220 150</td><td>Filing a brief in support of an appeal</td><td></td></tr><tr><td>121 260</td><td>221 130</td><td>Request for oral hearing</td><td></td></tr><tr><td>138 1,470</td><td>138 1,470</td><td>Petition to institute a public use proceeding</td><td></td></tr><tr><td>140 110</td><td>240 55</td><td>Petition to revive unavoidably abandoned application</td><td></td></tr><tr><td>141 1,290</td><td>241 645</td><td>Petition to revive unintentionally abandoned application</td><td></td></tr><tr><td>142 1,290</td><td>242 645</td><td>Utility issue fee (or reissue)</td><td></td></tr><tr><td>143 440</td><td>243 220</td><td>Design issue fee</td><td></td></tr><tr><td>144 650</td><td>244 325</td><td>Plant issue fee</td><td></td></tr><tr><td>122 130</td><td>122 130</td><td>Petitions to the Commissioner</td><td></td></tr><tr><td>123 50</td><td>123 50</td><td>Petitions related to provisional applications</td><td></td></tr><tr><td>126 230</td><td>126 230</td><td>Submission of Information Disclosure Stmt</td><td></td></tr><tr><td>581 40</td><td>581 40</td><td>Recording each patent assignment per property (times number of properties)</td><td></td></tr><tr><td>146 770</td><td>246 385</td><td>Filing a submission after final rejection (37 CFR 1.129(a))</td><td></td></tr><tr><td>149 770</td><td>249 385</td><td>For each additional invention to be examined (37 CFR 1.129(b))</td><td></td></tr><tr><td colspan="2">Other fee (specify) _____</td><td></td><td></td></tr><tr><td colspan="2">Other fee (specify) _____</td><td></td><td></td></tr></tbody></table>	Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid	105 130	205 65	Surcharge - late filing fee or oath		127 50	227 25	Surcharge - late provisional filing fee or cover sheet.		139 130	139 130	Non-English specification		147 2,460	147 2,460	For filing a request for reexamination		112 900	112 900	Requesting publication of SIR prior to Examiner action		113 1,790	113 1,790	Requesting publication of SIR after Examiner action		115 110	215 55	Extension for response within first month		116 390	216 195	Extension for response within second month		117 930	217 465	Extension for response within third month		118 1,470	218 735	Extension for response within fourth month		119 300	219 150	Notice of Appeal		120 300	220 150	Filing a brief in support of an appeal		121 260	221 130	Request for oral hearing		138 1,470	138 1,470	Petition to institute a public use proceeding		140 110	240 55	Petition to revive unavoidably abandoned application		141 1,290	241 645	Petition to revive unintentionally abandoned application		142 1,290	242 645	Utility issue fee (or reissue)		143 440	243 220	Design issue fee		144 650	244 325	Plant issue fee		122 130	122 130	Petitions to the Commissioner		123 50	123 50	Petitions related to provisional applications		126 230	126 230	Submission of Information Disclosure Stmt		581 40	581 40	Recording each patent assignment per property (times number of properties)		146 770	246 385	Filing a submission after final rejection (37 CFR 1.129(a))		149 770	249 385	For each additional invention to be examined (37 CFR 1.129(b))		Other fee (specify) _____				Other fee (specify) _____			
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SUBMITTED BY		Complete (if applicable)	
Typed or Printed Name	JULIO L. PIMENTEL	Reg. Number	
Signature		Date	7-2-97
		Deposit Account User ID	



**VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) & 1.27(b))—INDEPENDENT INVENTOR**

Docket Number (Optional)

Applicant or Patentee: JULIO L. PIMENTEL

Application or Patent No.: _____

Filed or Issued: _____

Title: DECREASED FAT ABSORPTION WITH AN ANTI-LIPASE ANTIBODY

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

☐ the specification filed herewith with title as listed above.

☒ the application identified above.

☐ the patent identified above.

I have not assigned, granted, conveyed, or licensed, and am under no obligation under contract or law to assign, grant, convey, or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

☒ No such person, concern, or organization exists.

☐ Each such person, concern, or organization is listed below.

Separate verified statements are required from each named person, concern, or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

JULIO L. PIMENTEL

NAME OF INVENTOR

NAME OF INVENTOR

NAME OF INVENTOR

Signature of inventor

Signature of inventor

Signature of inventor

7-2-97

Date

Date

Date



TITLE OF THE INVENTION

DECREASED FAT ABSORPTION WITH AN ANTI-LIPASE ANTIBODY

5

BACKGROUND OF THE INVENTION

Field of the invention

A food additive that decrease fat absorption in mammals

10

Discussion of the background

Our sedentary life including the decreased physical activity and increased food intake have made us prone to be overweight. The above has brought as consequence that almost 40-50 % of the USA population is 20% above their desirable weight. The advance in the science of food and nutrition not only has made us wiser about the functions of all nutrients but also by applying that knowledge we have concentrated food in smaller portions by which the satisfaction of filling is decreased. Even if the amount of food intake remains the same, we will have an excess caloric intake due to the high energy concentration of such type of food (Bell, et al 1997). Currently, the weight loss related market is full of diet

pills that reduce appetite by suppressing brain hormones, drugs that suppress the absorption of nutrients, pills that supposedly have ergogenics effect, pills that increase food passage rate and other fad diets. Mostly all of these drugs
5 have secondary effects like depression, anxiety, addiction and others.

A new approach for the reduction of calories in food is by the use of fat substitutes (Gershoff, et al 1995). Each gram of fat provides 9 calories as compared to 4 calories per
10 gram of carbohydrate and protein. Fat substitutes mainly those made of long carbohydrate chains are use for the elaboration of prepared food with the purpose of maintaining fat properties in the prepared food but decreasing calories. A new fat substitute, Olestra, which is made of long chain
15 fatty acids that are too big for digestive enzymes (lipase) to breakdown, therefore that type of fat is not absorbed. It has been observed that the consumption of Olestra has resulted in decreased absorption of fat soluble and the presence of fat in the feces. A long term study (12 weeks)
20 where 1/3 of the dietary fat was replaced with olestra, female subjects lost weight and did not compensate for the reduced calories and fat intake (Roy, et al, 1997).

In the animal industry, researchers have been working on the reduction of fat accumulation in animals since this characteristic first, has a negative effect on profits and second, consumers want less visible fat in order to decrease the health risk.

Fat accumulation in animals has been reduced by passively administered antibodies against adipocyte plasma membrane in rats, pigs, rabbits and lambs. Immunity against growth hormone has also decreased abdominal fat in chickens (Brodie and Hu, 1996; Moloney, 1995; Flint, 1992).

Lipase, an enzyme produced by the pancreas, hydrolyzes triacylglycerides into free fatty acids and glycerol. This is a crucial step in breaking down ingested fat in the gastrointestinal tract. Lipase is more active in the duodenum (small intestine) where broken down fat with the aid of bile salts form micelles and then are absorbed by the intestinal mucosa.

Therefore, by inhibiting lipase the ingested fat will not be absorbed and the energy supplied by fat and the fat itself will be excreted.

SUMMARY OF THE INVENTION

A method for the inhibition of fat absorption in mammals.

5

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention relates to a method for decreasing fat absorption by orally feeding chicken antibodies against lipase. The preferred antigen for obtaining the antibodies is
10 a swine pancreatic extract that contains lipase. This antigen is commercially produced by Sigma Chemical Co. Lipase is a conserve molecule with similar structure between animal and plant species, therefore an antibody against swine lipase will cross-react with other species' lipase. We have found
15 that by feeding anti-lipase antibodies to mice and rats will result in either decreased body weight or reduced feed efficiency. The antibody extract can either be fed in water suspension, included in feed as dry powder and/or encapsulated in liposomes.

20 Previous research on the effectiveness of chicken antibodies has been reported; i.e. the prevention of bacterial infection in swine, calf and dairy cows (Yokoyama et al, 1993; Erhard et al 1993; Coleman, 1995). These

researches have also demonstrated the presence of intact avian antibodies in the gastro-intestinal tract of the animals.

Although chickens antibodies are known to protect against bacterial infections, no antibody has been reported to decreased fat absorption.

It will be apparent for those skilled in the art that the aforementioned objects and other advantages may be further achieved by the practice of the present invention.

10

Example 1

This example illustrate the preparation of the specific antibody against lipase. 17-week old hens were injected with 2.5 mg of lipase (Sigma Chemical Co.). The inoculum was prepared by dissolving the enzyme in 0.2 ml phosphate buffered saline (PBS, pH 7.3) and 0.2 ml complete Freund's adjuvant. The antigen preparation was injected into two sites 0.2 ml in each (right and left) pectoralis muscle. A total of 0.4 ml of antigen preparation per hen was administered. A second injection was administered 5-6 weeks following the initial injection (at about 50% egg hen production). In the second antigen preparation, incomplete Freund's adjuvant was used instead of complete Freund's adjuvant. Hens were re-

20

injected with the antigen preparation every two months or when the antibody titer was determined to be low. Antibody titer was determined by ELISA. Hens had free access to feed and water and they were maintained in an isolated room in order to minimize outside contamination.

Example 2

Antibody was purified as follows: One volume of egg yolk of example 1 was mixed with 9 volumes of distilled water and left to sit overnight at 4 °C. Then the aqueous portion was centrifuged at 4000 rpm for 10 minutes and filtered through a cheesecloth in order to remove any excess fat. The aqueous portion contains all the protein present in the egg yolk which includes all the antibodies (IgY). The liquid was frozen and then was freeze dried. The antibody activity was determined by ELISA.

Example 3

Antibody against lipase was determined as follows:

1.- ELISA plates were coated with 100 ul lipase preparation (50 ug/ml) in carbonate buffer. The plates were incubated at 4 °C overnight prior to blocking with 1.5% bovine serum albumin for 4 hours at room temperature.

2.- 100 ul of a 0.5 mg protein/ml antibody extract was added to each well and the plates incubated at room temperature for 1 hour.

3.- Plates were washed with PBS-tween solution. 100 ul of rabbit anti-chicken IgG conjugated to horseradish peroxidase was added to each well. The plates were incubated at room temperature for 1 hour.

4.- Plates were washed with PBS-tween and 100 ul of TMB substrate was added to each well and incubated for 15 minutes.

5.- The reaction was stopped with 100 ul of 2 M sulfuric acid.

6.- Plates were read at 455 nm in an ELISA plate reader.

7.- Titer was determine as the inverse of the dilution at which O.D. of the immunized egg was similar to the un-immunized control (O.D. < 0.100).

Example 4

This study illustrates the in vitro inhibition of lipase by the chicken anti-lipase antibody. The effectiveness of the antibody was verified by using a test specific for the determination of lipase in serum (Sigma Chemical Co). We modified this test by adding a known amount of enzyme

(lipase) and antibody to a certain volume of phosphate buffered saline. The resulting activity was expressed as Sigma-Tietz units/ml, which is equal to the ml of 0.05 N NaOH required to neutralize the fatty acid formed in the reaction.

- 5 In a preliminary study we found the following:

Lipase (mg)	anti-lipase (protein extract) (mg)	Lipase Activity (U)	% decreased activity
2.0	0	17.3	
2.0	9.0	18.8	0
1.0	0	14.0	
1.0	9.0	12.5	11
0.5	0	10.4	
0.5	9.0	9.8	6
0.25	0	8.1	
0.25	9.0	6.7	17

In a second test; higher amount of antibody extract was used. The results are as follows:

Lipase (mg)	Anti-lipase Protein Extract (mg)	Lipase Activity (U)	% decreased activity
2.0	0	18.7	
2.0	37	14.0	25
1.0	0	13.5	
1.0	37	6.9	49

Example 5

This study illustrates the effect of anti-lipase antibody in mice. Two groups of 5 2-month old mice (25-34 gr each) were given 5 mg of antibody (protein extract) per ml of water. The antibody was mixed with water on a daily basis. Mice were fed the same amount of feed in both groups (approx. 5 gr/mice/day). The length of the experiment was 58 days. The results are as follows

	total* initial body weight (gr)	total final body weight (gr)	difference in body weight (gr)	total feed intake (gr)	gr of feed needed to gain 1 gr of body weight
control	157	199	42	1039	24.74
anti-lipase	156	187	31	1039	33.52

* Sum of 5 mice/trt

Example 6

This study illustrate the effect of anti-lipase when fed at lower levels than in example 5. Two groups of 5 5-month old mice (32-35 gr each) were given 1 mg of antibody (protein extract) per ml of water for the first 7 days then it was increased to 2 mg/ml of water. Mice in both groups were fed the same amount of feed for 35 days. The results were as follows.

	Total initial body weight (gr)	Total final body weight (gr)	difference in body weight	total feed intake (gr)	gr of feed needed to gain 1 gr of body weight
control	182	204	22	787.4	35.79
anti-lipase	181	185	4	788.5	197.13

10

Example 7

This study demonstrate the encapsulation of anti-lipase antibodies by liposomes. This liposome preparation was based on the procedure by Shimizu et al (1993). Final liposome suspension was frozen and later freeze dried. A known amount

of freeze dried liposome was mixed with rat diet, and fed daily for the length of the study.

Example 8

5 This study illustrate the effect of anti-lipase antibodies in rats. Twelve retired breeder Sprague Dawley rats (Harlan, Wisconsin) were individually caged and supplied with free access to water. They were fed a rabbit chow which was supplemented with corn oil in order increase fat content
10 to 30%. Feed intake was monitored for 1 week in order to determine the amount of feed needed to maintain their initial body weight. Rats were divided in two groups one fed the high fat diet and the other group was fed the same diet with freeze dried liposome containing anti-lipase antibody
15 extract. The treated diet contained 750 mg antibody/kg of diet. The results after 1 week of treatment are as follows:

	Initial body weight (gr) *	One week feed intake (gr)	Final body weight (gr)	grams of feed needed to gain 1 gr of body weight
control	316	132.3	327	12.0
antibody	319	129.4	326	18.5

* average of 6 rats.

Example 9

Since it was observed that rats gained weight in example 8, the same rats were used but this time feed was restricted.

5 The results are as follows:

	initial body weight (gr)	Final body weight (gr)	difference in body weight	feed intake (gr)
control	327	319	-8	102
antibody	326	317	-9	101

Example 10

10 This study demonstrate the effect of the anti-lipase when fed to rats at maintenance feed intake. The results are as follows:

	initial body weight (gr)	One week body weight (gr)	difference in body weight	One week feed intake (gr)	gr of feed needed to gain 1 gr of body weight
control	325	332	7	112	16
antibody	324	325	1	114	114

It will be apparent to those skilled in the art that a number of modifications and variations may be made without departing from the scope of the present invention as set forth in the appended claims.

5

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What is claimed is :

- 1.- A method for decreasing fat absorption in mammals and avian by feeding an antibody that binds lipase.
- 5 2.- A method of claim 1 wherein lipase is any enzyme that is needed for the hydrolysis of fat in order for it to be absorbed by the gastro-intestinal mucosa.
- 3.- A method of claim 1 wherein the antibody binds to lipase therefore inhibiting its activity in the gastro intestinal
10 tract.
- 4.- A method of claim 1 wherein lipase is of mammal, avian or plant origin.
- 5.- A method of claim 4 wherein mammal is such as human, primates, monogastrics and ruminants.
- 15 6.- A method of claim 4 wherein avian is such as chicken, turkey, goose, duck, quail, pheasant, pigeon.
- 7.- A method of claim 4 wherein plants include bacteria, mold and yeast.
- 8.- A method of claim 1 wherein antibody was produced in
20 avian eggs.
- 9.- A method of claim 1 wherein the antibody can also be produced in other commercially or laboratory antibody-

producing animal including monoclonal, plant and bacteria produced antibodies.

10.- A method of claim 8 wherein avian compromise chicken, duck, goose, turkey, pheasant, quail, pigeon.

5 11.- A method of claim 8 wherein the antibodies are obtained from unfractionated whole eggs.

12.- A method of claim 8 wherein the antibodies are obtained from the yolk of an egg without fractionation thereof.

13.- A method of claim 8 wherein the antibodies are obtained
10 by fractionating the egg yolk resulting in a protein concentrate or pure IgY (chicken immunoglobulin).

14.- A method of claim 1 wherein antibody produced as claim 8-13 is kept as it was obtained or is further processed in order to freeze dry, spray dry or encapsulated.

15 15.- A method of claim 14 wherein encapsulation is such process that protect the antibody against changes that inactivate or disrupt the effectiveness of the antibody.

16.- A method of claim 14 wherein encapsulation methods are liposomes, protein coating, carbohydrate coating, other
20 chemical processes that will coat the antibody.

17.- A method of claim 1 wherein the antibody or the antibody containing material is orally fed.

18.- A method of claim 17 wherein the orally fed antibody or the antibody containing material is fed by itself as powder form, liquid form, compressed tablet or other type of pill/tablet like material.

5 19.- A method of claim 18 wherein the powder or the liquid antibody or the antibody containing material are fed as part of a processed or prepared food.

20.- A method of claim 19 wherein processed or prepared food is any food where the antibody or the antibody containing
10 material in powder or liquid form have been included as part of the formulation or recipe.

21.- A method of claim 20 wherein processed or prepared food is any food for human or animal consumption which include ready to eat, ready to mix, concentrate, additives,
15 refrigerated and frozen food.

22.- A method of claim 1 wherein decreased fat absorption is due to the decreased lipase activity, therefore fat is excreted and not absorbed in the gastro-intestinal tract.

23.- A method of transferring gastro-intestinal enzymes
20 antibodies in animals and humans to other animals or humans in order to decrease absorption of nutrients such as protein, carbohydrates and lipids.

24.- A method of claim 23 wherein said gastro-intestinal tract enzymes is selected from amylase, trypsin, chymotrypsin, protease and other enzymes required for the absorption of nutrients.

5 25.- A method of transferring antibodies from an animal or human, to other animals or humans in order to modify a biochemical process comprising:

administering to said animal or human an antibody containing substance wherein said substance is derived from a
10 producer animal or human wherein said producer animal or human has been immunized with the antigen wherein said antigen regulate a biochemical process in the gastro-intestinal tract.

ABSTRACT OF THE DISCLOSURE

A method for the decrease of fat absorption in any animal, wherein the animal is fed an antibody produced
5 against lipase, an enzyme which is required for fat absorption.

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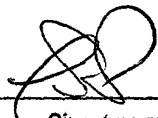
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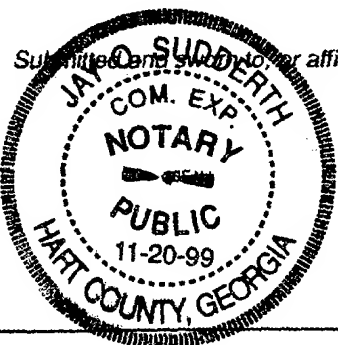
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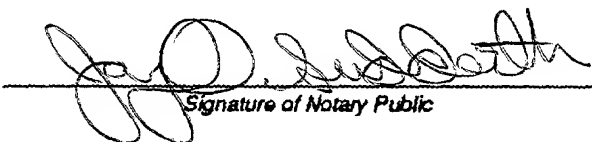
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